



# **Datalogger IoT-** **開發環境建立**

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# Datalogger Iot 簡述



首頁 解決方案 ▾ 開發者專區 ▾ 雲服務 ▾ 論壇 相關連結 ▾ 登入



## Datalogger (by Kevin's Lab)



Partner Designed



Manual



Buy it



Tutorial



### MCU

Part Number: RTL8720DF

32-bit KM4 (Arm Cortex-M33 compatible)

32-bit KM0 (Arm Cortex-M23 compatible)



### MEMORY

512KB SRAM + 4MB Flash



### KEY FEATURES

Integrated WiFi 4 (802.11 b/g/n 1x1) SoC

Dual-band, 2.4GHz or 5GHz

Bluetooth LE 5.0

Bluetooth high-power mode up to 10dB

Low Power Mode

Auto Download Mode

On-board PCB antenna

DC IN: 6V ~ 24V

DC OUT: 5V / 1A

Arduino Uno mounting holes

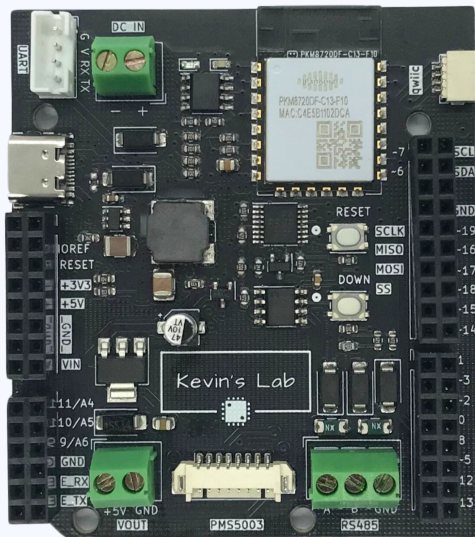
Popular Connectors: qwiic(I2C), UART(USART), RS485

UART expansion

RS485 with TVS + PTS protection and 120-ohm resistor

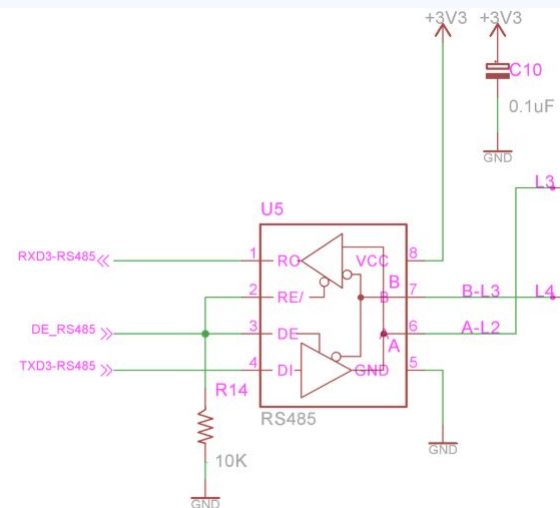
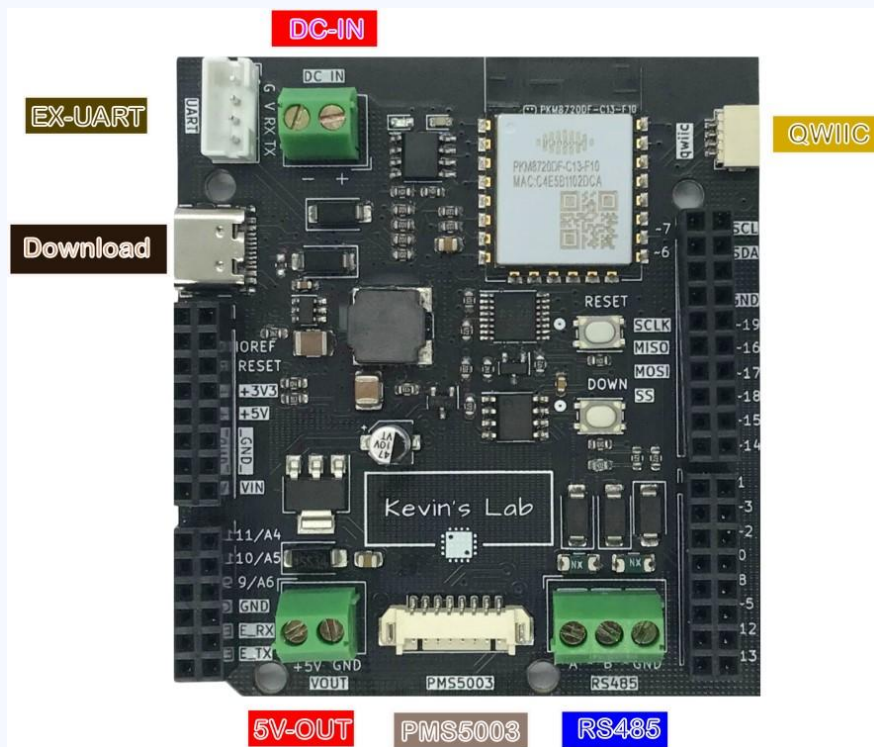
# Datalogger Iot 簡述

- 針對工業應用需求設計的 UNO 開發板
- 內建 qwiic 介面,支援多種 I2C 傳感器模組快速擴充
- 集成 RS485 通訊介面,內置 PTS 和 TVS 保護電路
- 內置專用 PMS5003 顆粒物傳感器連接器,方便接線
- 集成 RS485 通訊介面,內置 PTS 和 TVS 保護電路
- 內置專用 PMS5003 顆粒物傳感器連接器,方便接線

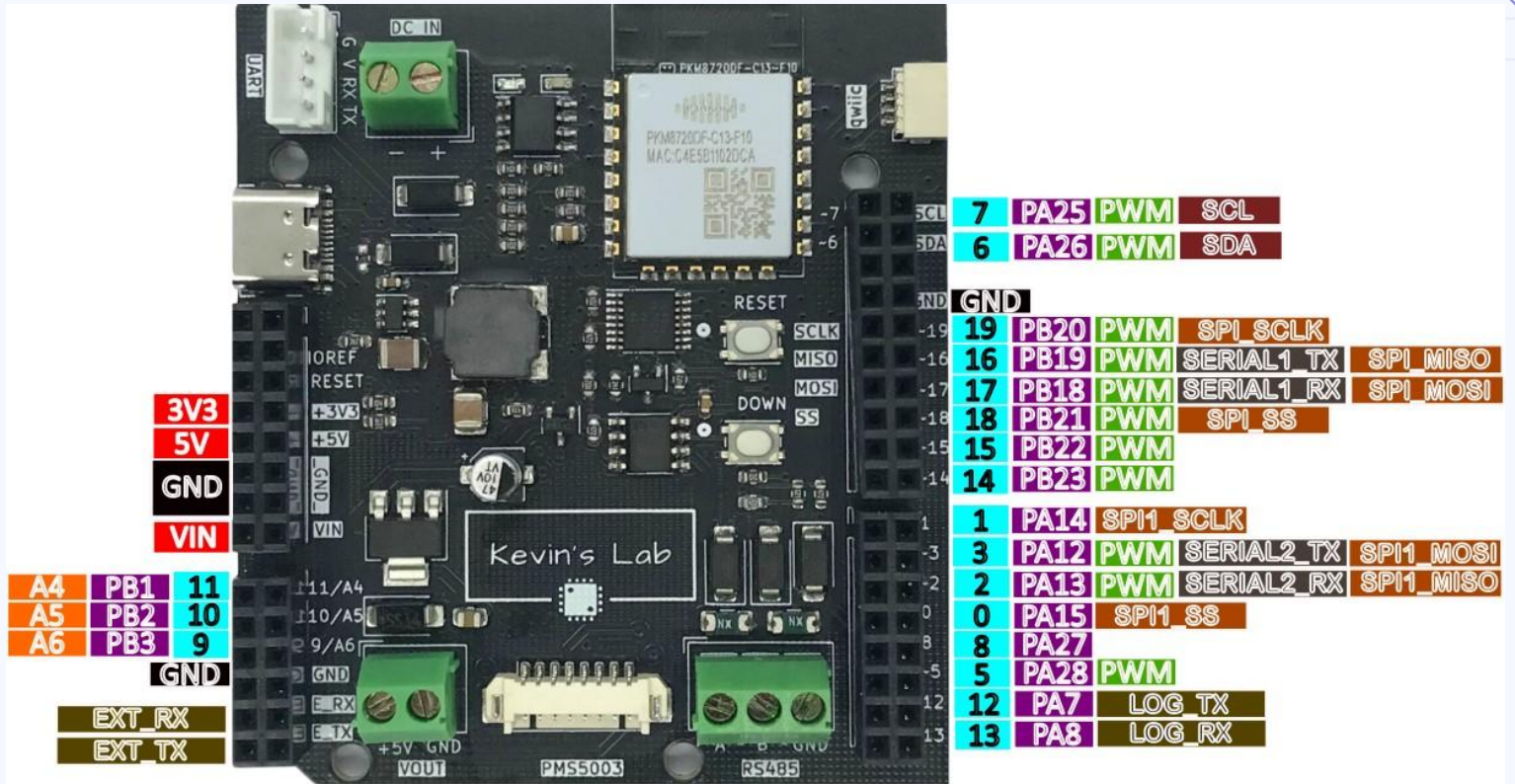


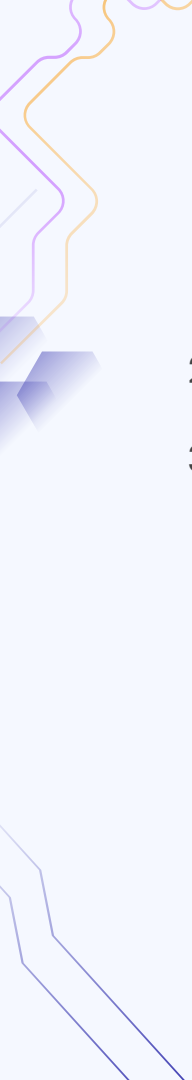
- 支援 12V~24V 直流電源輸入,適用於工業電源供應
- PCB 板上設有電源管理、過載和短路保護功能
- 擴展接腳包括 GPIO、ADC、PWM 等,滿足多樣化需求
- 附帶 Arduino IDE 開發環境和豐富的範例程式碼
- 體積小巧,適合嵌入式工業設備和現場監控應用
- 可廣泛應用於工業自動化、環境監測、智慧城市等領域

# Datalogger Iot 簡述



- RS485 電路已有 120 歐姆 電阻
- DE - /RE 不需要控制



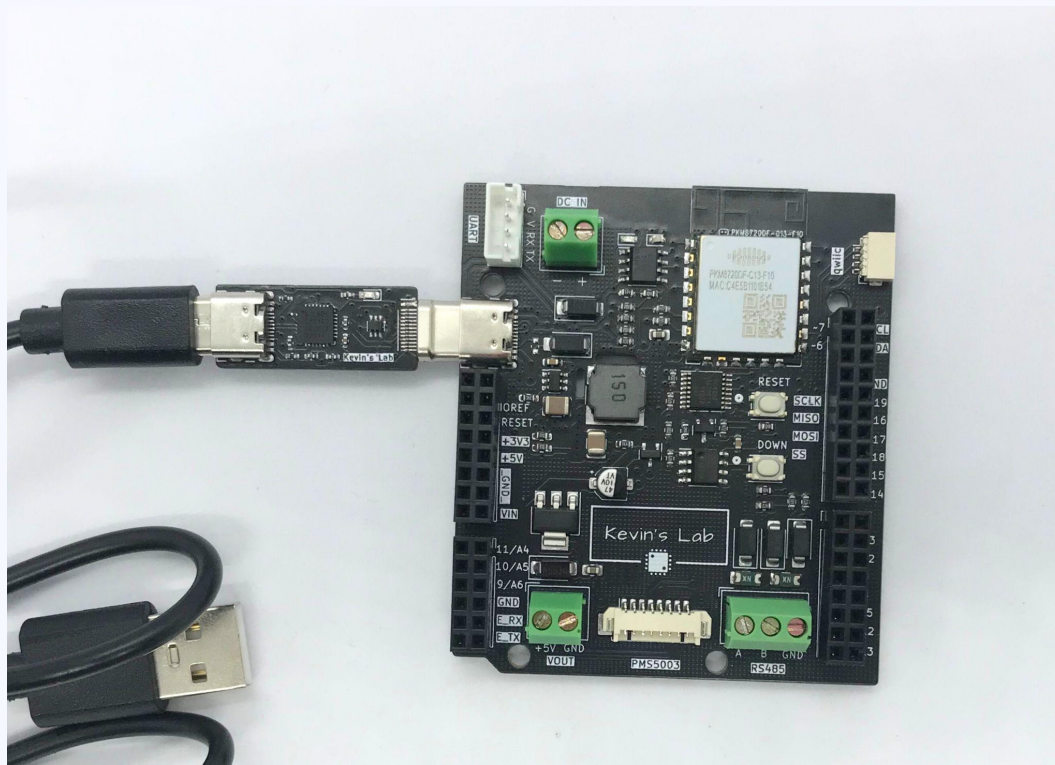
- 
1. USB 上傳工具驅動程式
  2. Arduino IDE 安裝
  3. 執行 Blink 程式測試

# USB 上傳工具





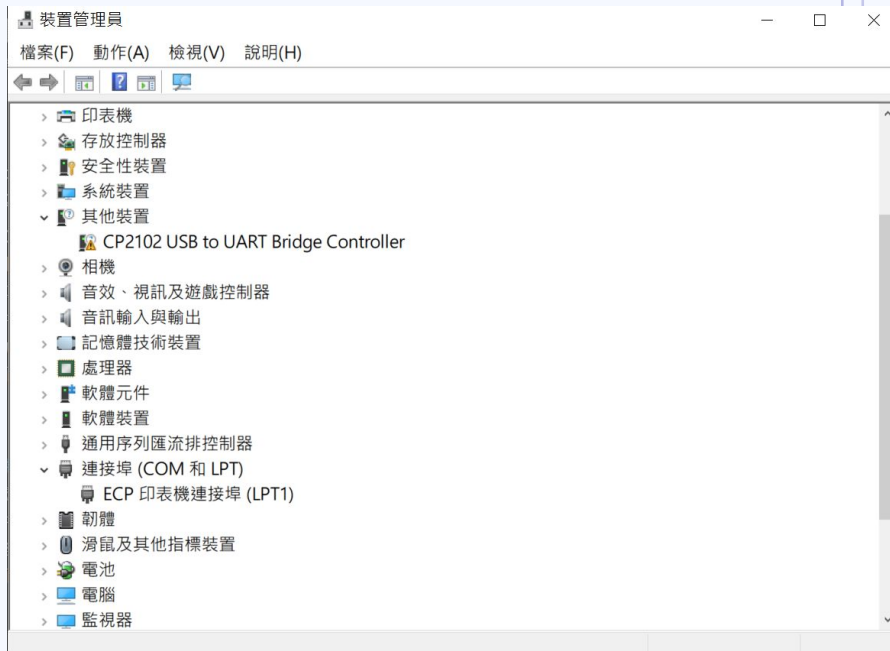
# USB 上傳工具





# USB 上傳工具

將USB 上傳工具接入 Type-C 及電腦  
如果在 裝置管理員 出現 驚嘆號，  
表示需要安裝驅動程式



# USB 上傳工具

開啟網頁:

<https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers?tab=downloads>

# USB 上傳工具

Windows 選擇  
CP210x Windows Drivers

Mac 選擇  
CP210x VCP MAC OSX Driver

## Software Downloads

[Software](#) (10)

### Software · 10

<a href="#">CP210x Universal Windows Driver</a>	v11.3.0 6/24/2023
<a href="#">CP210x VCP Mac OSX Driver</a>	v6.0.2 10/27/2021
<a href="#">CP210x Windows Drivers</a>	v6.7.6 9/4/2020
<a href="#">CP210x Windows Drivers with Serial Enumerator</a>	v6.7.6 9/4/2020
<a href="#">CP210x_5x_AppNote_Archive</a>	9/4/2020
<a href="#">CP210x_VCP_Win2K</a>	9/4/2020
<a href="#">Linux 2.6.x VCP Revision History</a>	9/4/2020
<a href="#">Linux 3.x.x/4.x.x/5.x.x VCP Driver</a> 	v3.x.x/4.x.x/5.x.x 1/29/2021
<a href="#">VCP Driver for WinCE60</a>	v2.1 9/4/2020
<a href="#">VCP Drivers for WinCE50</a>	v2.1 9/4/2020

# USB 上傳工具

下載後，並解壓縮。找到

CP210xVCPInstaller\_x64.exe

並執行它

# USB 上傳工具

按下一步繼續，  
按指示安裝。

## CP210x USB to UART Bridge Driver Installer



### Welcome to the CP210x USB to UART Bridge Driver Installer

This wizard will help you install the drivers for your CP210x USB to UART Bridge device.

若要繼續，請按 [下一步]。

< 上一步(B)

下一步(N) >

取消

# USB 上傳工具

重新拔插 Type-C



# 下載及安裝 Arduino IDE

下載點

[arduino.cc/en/software](https://arduino.cc/en/software)



## Arduino IDE 2.1.0

The new major release of the Arduino IDE is faster and even more powerful! In addition to a more modern editor and a more responsive interface it features autocompletion, code navigation, and even a live debugger.

For more details, please refer to the [Arduino IDE 2.0 documentation](#).

Nightly builds with the latest bugfixes are available through the section below.

### DOWNLOAD OPTIONS

**Windows** Win 10 and newer, 64 bits

**Windows** MSI installer

**Windows** ZIP file

**Linux** Applmage 64 bits (X86-64)

**Linux** ZIP file 64 bits (X86-64)


**macOS** Intel, 10.14: "Mojave" or newer, 64 bits


**macOS** Apple Silicon, 11: "Big Sur" or newer, 64 bits

[Release Notes](#)

- 開啟網頁
  - Google Search : AMEBAIOT GITHUB

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 GitHub  
https://github.com/ambiot · 翻譯這個網頁



### Ameba IoT ambiot

Welcome to Ameba IoT site on GitHub. Realtek Ameba IoT supports a large variety of open-source projects, including SDKs, HDKs, solutions, components, and tools.

3

2

## Arduino SDK Development

- [Ameba1 Family](#)
- [AmebaD Family](#)
- [AmebaPro2 Family](#)

## 1. About dev & master branch

Branch	Usage	json links
master	stable release	<a href="https://github.com/Ameba-AIoT/ameba-arduino-d/raw/master/Arduino_package/package_realtek_amebad_index.json">https://github.com/Ameba-AIoT/ameba-arduino-d/raw/master/Arduino_package/package_realtek_amebad_index.json</a>
dev	merge Pull Request & early release	<a href="https://github.com/Ameba-AIoT/ameba-arduino-d/raw/dev/Arduino_package/package_realtek_amebad_early_index.json">https://github.com/Ameba-AIoT/ameba-arduino-d/raw/dev/Arduino_package/package_realtek_amebad_early_index.json</a>

# Arduino 設定

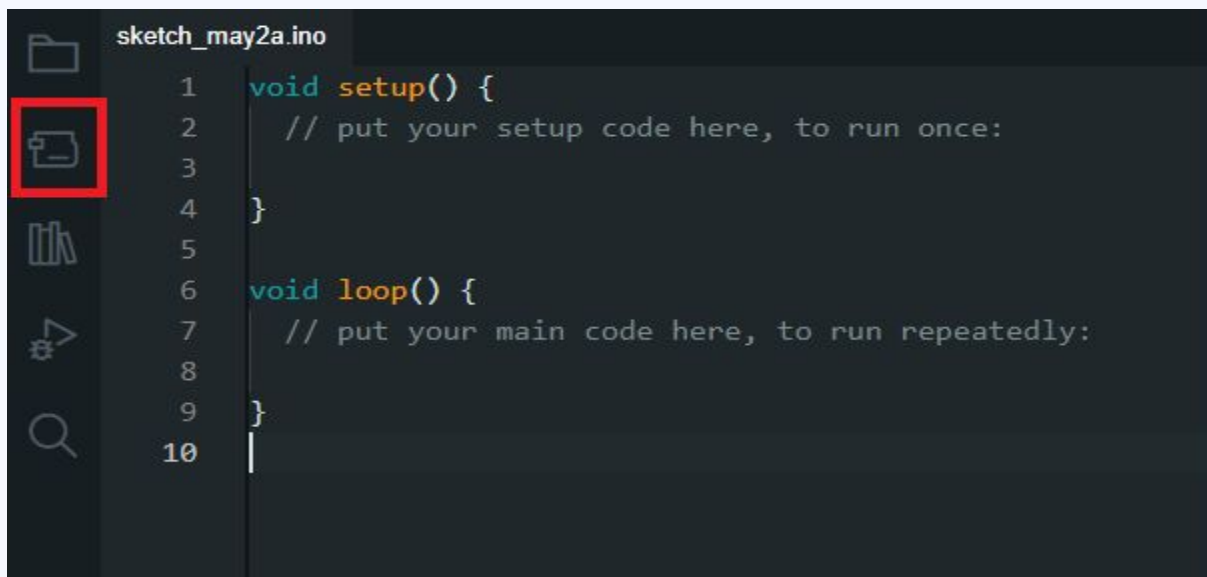
開啟 File / preferences

在 Additional boards manager URLs 的欄位 貼上 網址, 點 OK 結束設定

Additional boards manager URLs: |

# Arduino 設定

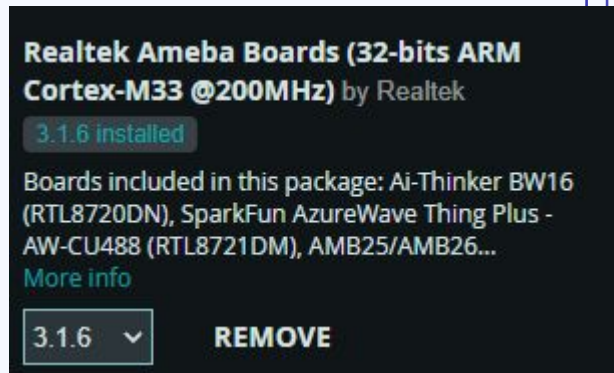
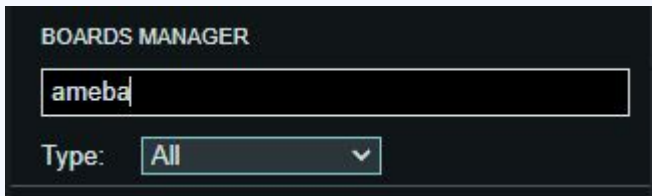
點取左側 第二個圖示， Boards Manager



# 開發環境安裝 - Arduino 設定

輸入 **ameba**

選擇 Realtek Ameba Boards (32-bits ARM Cortex-M33 @200MHz)  
正式版



# 開發環境安裝 - Arduino 設定

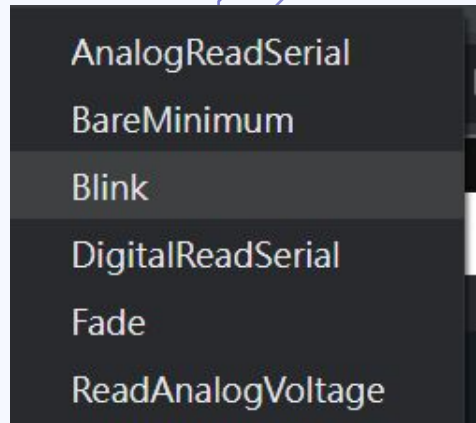
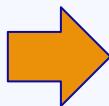
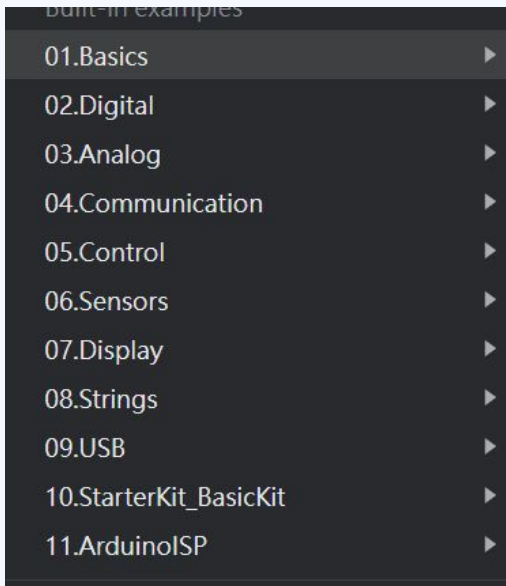
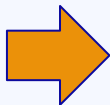
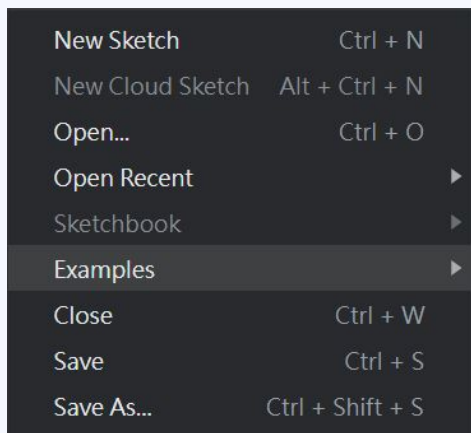
1. 透過 USB 連接 開發板
2. 選擇 Select other board and port,  
Board 選擇 Datalogger (RTL8720DF)
3. 完成後, 點擊 OK 。





# 第一個程式

打開 File / Examples / 01.Basics / Blink



# 第一個程式

- 程式上傳前請確認
  - 工具 (Tools) / Auto Flash Mode -> **Enable**

# 常用程式庫安裝及使用

# 常用程式庫安裝及使用

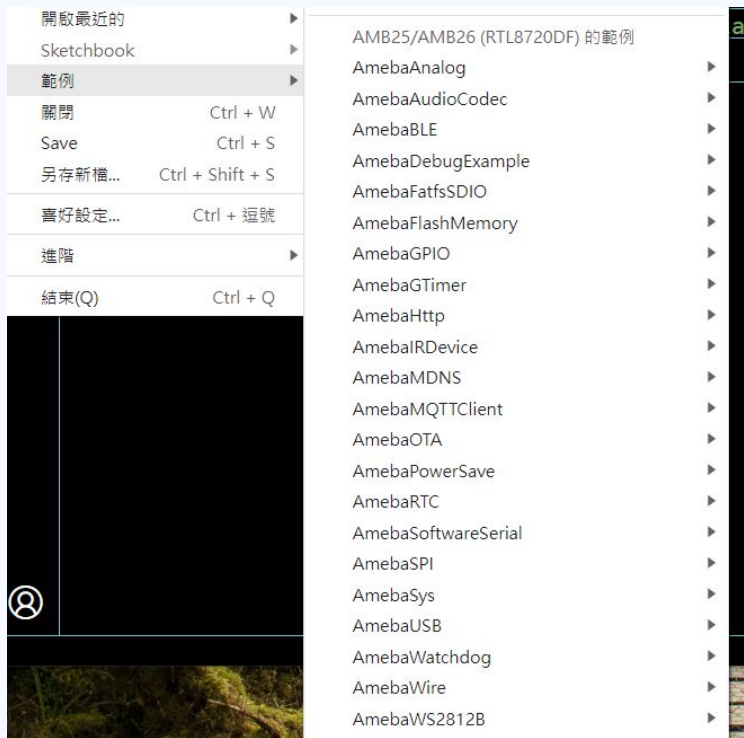
1. 範例程式及資料（操作手冊及程式庫）
  - a. [https://github.com/cold63/Datalogger\\_lot/tree/main](https://github.com/cold63/Datalogger_lot/tree/main)

The screenshot shows the GitHub repository page for 'Datalogger\_lot' by user 'cold63'. The repository is public and has 2 branches and 0 tags. The main branch is selected. The page shows a recent merge pull request #24 from cold63/master, merged 35 minutes ago. Below the pull request, there is a list of recent commits:

Commit	Description	Time
libraries	upload library, sd card and rs485	36 minutes ago
src	update data	last week
tools	add software tool, serial port utility	2 weeks ago
Datalogger開始_安裝及使用_V1_0.pdf	update user	last week
README.md	update README.md	4 months ago

# 常用程式庫安裝及使用

Realtek 提供的 Arduino 範例



# 常用程式庫安裝

1. SHT40溫溼度感測器
  - a. Sensirion I2C SHT4X

**Sensirion I2C SHT4x** 提供者：Sensirion

1.1.2已安裝

Library for the SHT4X sensor family by Sensirion  
Enables you to use the SHT4X sensor family via I2C.

詳細資訊

1.1.2 ▼

移除



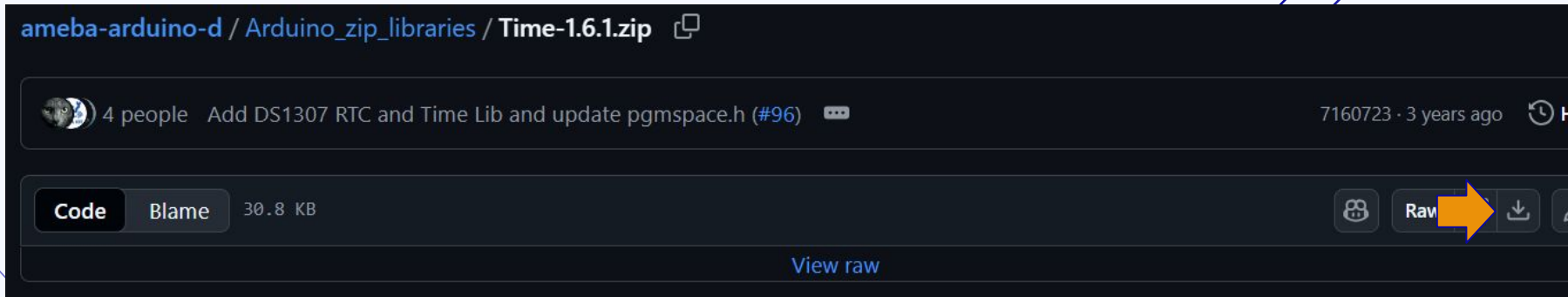


# 常用程式庫安裝

1. Time
  - a. *Time* (下載安裝)

Zip 封裝的程式庫下載點

[https://github.com/Ameba-AIoT/ameba-arduino-d/blob/dev/Arduino\\_zip\\_libraries/Time-1.6.1.zip](https://github.com/Ameba-AIoT/ameba-arduino-d/blob/dev/Arduino_zip_libraries/Time-1.6.1.zip)



# 常用程式庫安裝及使用

安裝 Zip 程式庫的方法

先找出您的 Library 資料夾在哪

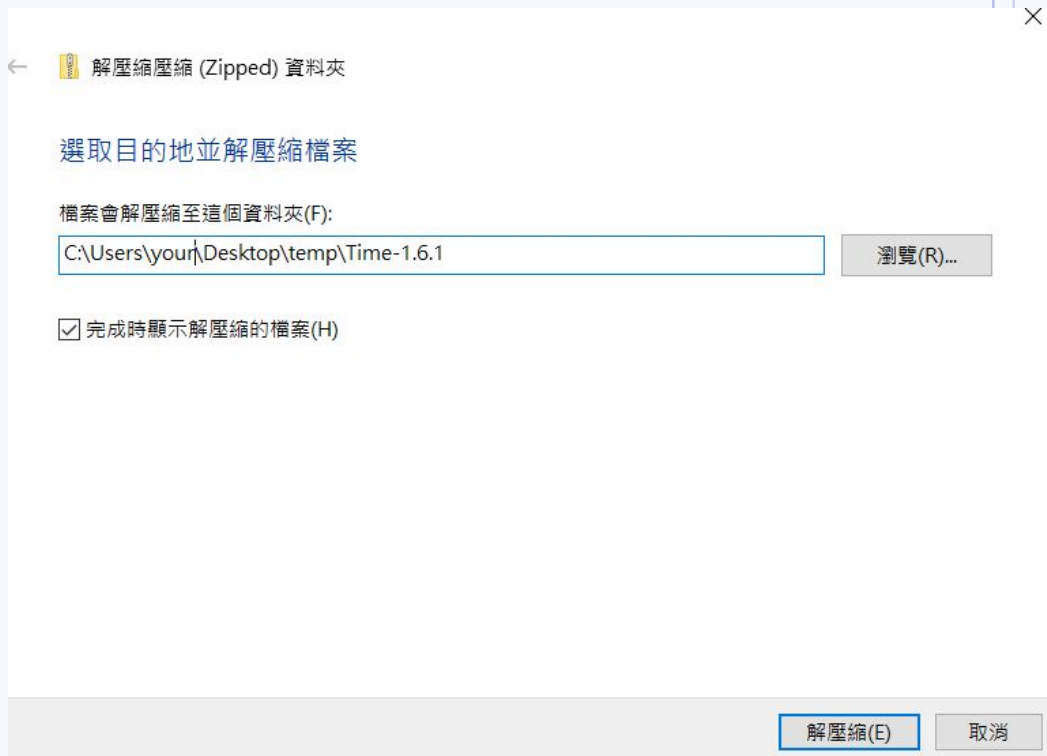
Arduino IDE -> 檔案 -> 喜好設定



# 常用程式庫安裝及使用

解壓縮 Time-1.6.1.zip

- 對著檔案按滑鼠右鍵
- 選擇“解壓縮全部”



# 常用程式庫安裝及使用

- 將資料夾更名為Time
- 然後將這個資料夾複製到 剛剛的 libraries 資料夾裡面

